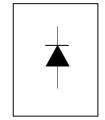
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International Rectifier

QUIET**IR** Series 10ETF..

FAST SOFT RECOVERY RECTIFIER DIODE



 V_F < 1.2V @ 10A t_{rr} = 50ns V_{RRM} 200 to 600V

Description/Features

The 10ETF.. fast soft recovery *QUIETIR* rectifier series has been optimized for combined short reverse recovery time and low forward voltage drop.

The glass passivation ensures stable reliable operation in the most severe temperature and power cycling conditions.

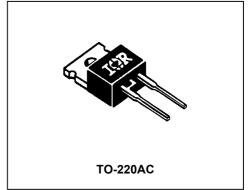
Typical applications are both:

- output rectification and freewheeling in inverters, choppers and converters
- and input rectifications where severe restrictions on conducted EMI should be met.

Major Ratings and Characteristics

Characteristics	10ETF	Units
I _{F(AV)} Sinusoidalwaveform	AV) Sinusoidalwaveform 10	
V _{RRM}	200 to 600	V
I _{FSM}	150	Α
V _F @10 A, T _J = 25°C	1.2	V
t _{rr} @1A, 100A/µs	50	ns
T _J	-40 to 150	°C

Package Outline



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Voltage Ratings

Part Number	V _{RRM} , maximum peak reverse voltage V	V _{RSM} , maximum non repetitive peak reverse voltage V	I _{RRM} 150°C mA
10ETF02	200	300	2
10ETF04	400	500	
10ETF06	600	700	

Absolute Maximum Ratings

	Parameters	10ETF	Units	Conditions
I _{F(AV)}	Max. Average Forward Current	10	Α	@T _C =128°C, 180° conduction half sine wave
I _{FSM}	Max. Peak One Cycle Non-Repetitive	150	Α	10ms Sine pulse, rated V _{RRM} applied
	Surge Current	160		10ms Sine pulse, no voltage reapplied
I ² t	Max. I ² tforfusing	112.5	A ² s	10ms Sine pulse, rated V _{RRM} applied
		160	1	10ms Sine pulse, no voltage reapplied
I ² √t	Max. I ² √t for fusing	1600	A ² √s	t=0.1 to 10ms, no voltage reapplied

Electrical Specifications

	Parameters	10ETF	Units	Conditi	ons
V_{FM}	Max. Forward Voltage Drop	1.2	V	@ 10A, T _J = 2	25°C
r _t	Forward slope resistance	23.5	mΩ	T _J = 150°C	
V _{F(TO}) Threshold voltage	0.85	٧		
I _{RM}	Max. Reverse Leakage Current	0.1	mA	T _J = 25 °C	V _R = rated V _{RRM}
		3.0		T _J = 150 °C	R RRM

Recovery Characteristics

	Parameters	10ETF	Units	Conditions	†
t _{rr}	Reverse Recovery Time	145	ns	I _F @ 10Apk	I _{FM} t _{rr} ,
Irr	Reverse Recovery Current	2.75	Α	@ 25A/ µs	
Q_{rr}	Reverse Recovery Charge	0.32	μC	@ 25°C	dir/ Qrr
S	Snap Factor	0.6			V I _{RM} (REC)

Thermal-Mechanical Specifications

	Parameters		10ETF	Units	Conditions
T _J	Max. Junction Temperature	Range	-40 to 150	°C	
T _{stg}	Max. Storage Temperature F	Range	-40 to 150	°C	
R _{thJC}	Max. Thermal Resistance Juto Case	ınction	1.5	°C/W	DCoperation
R _{thJA}	Max. Thermal Resistance Juto Ambient	ınction	62	°C/W	
R _{thCS}	Typical Thermal Resistance Heatsink	, Case to	0.5	°C/W	Mounting surface, smooth and greased
wt	ApproximateWeight		2(0.07)	g (oz.)	
Т	Mounting Torque	Min.	6(5)	Kg-cm	
		Max.	12(10)	(lbf-in)	
	Case Style		TO-220	AC	JEDEC

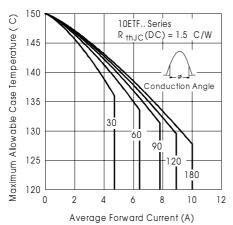


Fig. 1 - Current Rating Characteristics

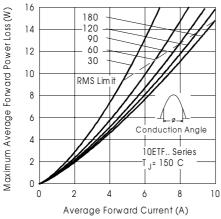


Fig. 3-Forward Power Loss Characteristics

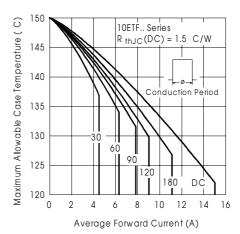


Fig. 2-Current Rating Characteristics

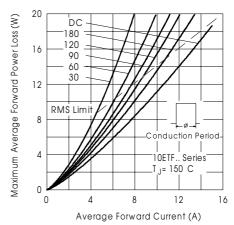
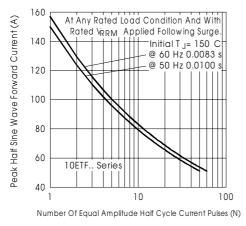


Fig. 4-Forward Power Loss Characteristics

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Rectifier



Maximum Non Repetitive Surge Current
Versus Pulse Train Duration.
Initial T J = 150 C
No Voltage Reapplied
Rated V RRM Reapplied
Rated V RRM Reapplied
120
100
80
10ETF.. Series
40
0.01
0.1
Pulse Train Duration (s)

Fig. 5 - Maximum Non-Repetitive Surge Current

Fig. 6-Maximum Non-Repetitive Surge Current

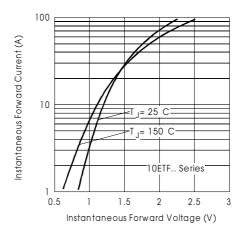
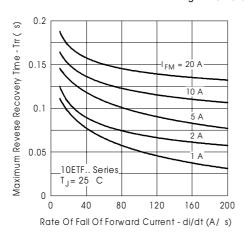


Fig. 7 - Forward Voltage Drop Characteristics





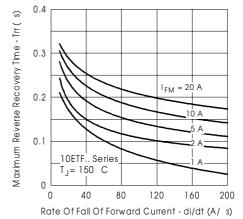


Fig. 8 - Recovery Time Characteristics, $T_J = 25^{\circ}C$

Fig. 9 - Recovery Time Characteristics, $T_J = 150$ °C

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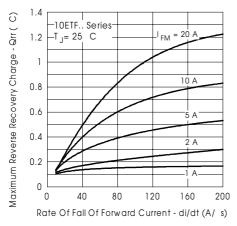


Fig. 10 - Recovery Charge Characteristics, T₁ = 25°C

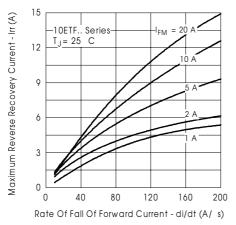


Fig. 12 - Recovery Current Characteristics, $T_J = 25^{\circ}C$

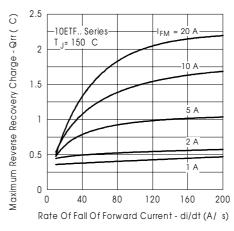


Fig. 11 - Recovery Charge Characteristics, T₁ = 150°C

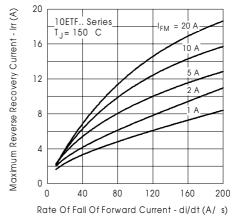


Fig. 13 - Recovery Current Characteristics, $T_J = 150$ °C

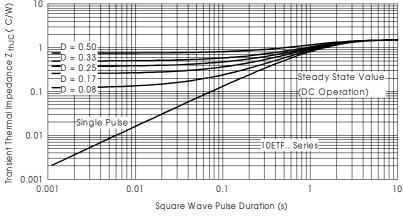
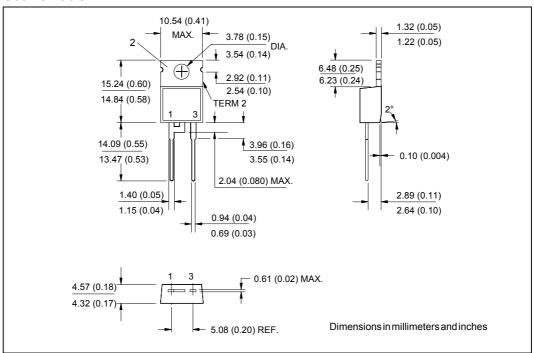


Fig. 14 - Thermal Impedance Z_{thJC} Characteristics

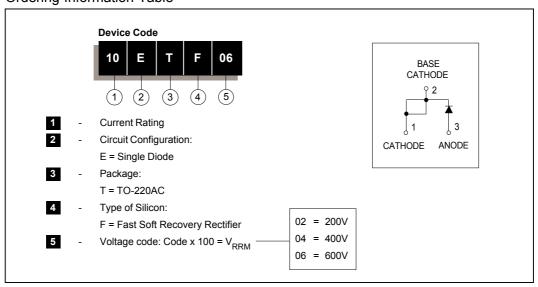
10ETF.. QUIETIR Series

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Outline Table



Ordering Information Table



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Data and specifications subject to change without notice.